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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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SUBJECT Technical Information on Soviet Aircraft, Maintenance and Inspection

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THIS IS UNEVALUATED INFORMATION

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Engines

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1. the RD-45 is the Soviet version of a British engine. The VK-1 is an improved version of the RD-45 and is installed in the IL-28. the IL-28 engines are started prior to flight by sparks, (from spark plugs located in cans #3 and #8), which sparks ignite the fuel air combination in the cans. The engines are not turned over prior to the igniting process.

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IL-28 Aircraft

2. The only equipment or supplies which had been received for use with the IL-28 aircraft was one radio set and one radar gun-sight. These were to be used for training purposes. A constant pressure of 728 mm Ng. and a constant temperature of 18C is maintained at all altitudes. Bulletproof glass is used at the navigators' and pilots' positions.

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The fuel capacity of the IL-28 is 8 tons. The fuel used is aviation kerosene with 1% of either MS oil (Maslo Selektivnoi Ochistki) or MK oil (Maslo Kislotno-Kontaktnoi Ochistki). The MS oil is of selected refinement which has undergone mechanical filtering and refining processes; MK oil is treated with acids and electricity. The VK-1 engine uses 12 liters of MK-20 or MK-22 oil per engine.

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The MIG-15 Aircraft

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the guns, (number and caliber unknown), are located in the nose.

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Preservation and Storage of Aircraft

4. All aircraft were operational and have no information on an organized storage program. The only storage process is that which is used by squadron maintenance personnel when the regiment goes on leave. The process consists of filling the cylinders with oil, greasing the parts which are liable to rust, covering wheels, engine and cockpit with covers and final storage of the the aircraft outdoors. To recondition aircraft so stored takes three men four to five hours. When a rebuilt engine arrives it is covered with a mixture of a rubbery substance and oil. This rubbery substance, when combined with sulphur, is the material from which gasoline resistant gasket material is made.

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Maintenance Organization and Procedures

6. The following information on maintenance, organization and procedures is based on experience with PE-2 type aircraft. Each aircraft in a squadron is assigned one technical officer, one senior sergeant, and one junior grade enlisted man. Every squadron has an inspection commission consisting of the Squadron Engineering Officer, the Flight Engineering Officer and one Technical Officer. In addition, the Division Engineering Officer, the Chief Engineer and four or five technical assistants which make unscheduled inspections of the squadrons three or four times a year. General maintenance work is done at the squadron level and specialized work is performed in one of the PARMS. PARMS are assigned to Regiments, Divisions, and Armies in the following manner:

Regiment	-	PARM # 1	Airframe repairs
Division	-	PARM # 4	Painting, replacement of tubing, small repairs on radios and electrical equipment.
Army	-	PARM # 11	Major overhaul of all components including engines.

Each mechanic has his own tools but there is always a tool shortage. Special equipment used for testing instruments, electrical equipment, etc. is usually available at a Special Equipment Shop.

Inspections

7. The preflight inspection takes three men 15 to 20 minutes and consists of removing the covers, checking oil, hydraulics, water and fuel tanks, warming up the engines, and a visual check for leakages. The warming of the engine is done by an officer of the crew, in whose absence it is done by the senior enlisted man. After inspection, the Flight Engineering Officer signs the release for flight. After flight, inspection plates and cowlings are removed and a complete visual check is performed on all accessories, attachments, etc. At the five hour inspection the oil pan is removed and the crankshaft, connecting rods and bearings are checked. This inspection takes three men about two hours to complete. The 10 hour inspection includes the removal of valve covers, checking of springs and clearances and the lubrication of control junctions and propeller controls. Three men work eight to ten hours on this inspection. At the 25 hour inspection fuel tank covers are removed, inspected for leakage, and cleaned, the magnetoes and points are checked and a complete lubrication is done. This inspection takes three men about $1\frac{1}{2}$ days to complete. Three men work two days completing the 50 hour inspection which includes replacement of hydraulic fluid, removal of oil tanks and cleaning and inspection by the squadron commission. Oil is changed every 15 to 18 hours between 50 hour inspections. The 100 hour inspection includes an engine change. The engines are drawn from battalion supply and are equipped with accessories. This inspection takes three men three to seven days to complete; an engine change alone can be done in one day by three men. At the end of 500 hours, the aircraft is sent to PARM #11 for major overhauling.

Supply

8. The squadron Engineering Officer is in charge of Technical Supply. The quantity on hand depends on available Battalion supplies and the aggressiveness of the Engineering Officer. All items except engines are kept at the squadron level. All items carried by Squadron supply are issued from Battalion supply; an additional number of engines, (approximately 5), are also carried at this level. Generators rubber couplings, oil lines, water pipes and exhaust pipes are items which are most difficult to secure as part replacements.

Records and Reports

9. The Aircraft Technical Officer keeps a daily record. [Enclosure (A)], of the preflight and after flight inspections. The Squadron Engineering Officer keeps the inspection and maintenance records; the Technical Officer of each aircraft maintains a flight log. In the event of engine or airframe failure, a Regimental or Divisional Inspection Commission makes an examination to determine the cause. An unsatisfactory report is written and in some cases has resulted in the grounding of all similar aircraft, these orders having been directed from Air Force Headquarters in Moscow.

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ENCLOSURE (A): Typical "Daily Maintenance Record" of preflight and after flight inspections.

ENCLOSURE (A)

DAILY MAINTENANCE RECORD
(Typical Record of Daily Preflight and Afterflight Inspections)

A complete record of all work performed on the aircraft (PE-2 type) is maintained by the Aircraft Maintenance Officer (Tekhnik Samolyota) who normally holds the rank of Junior Technical Lieutenant (Mladshyi Tekhnik Leitenant) and is responsible for one aircraft. The title of the document is Radochyi Tetryad' Tekhnika Samolyota Mladshyi Leitenant Petrov, V.A., Samolyot #12/343 (Work note book of Technician 2nd Lieutenant Petrov, V.A., Aircraft #12/343). There is no standard form or size used for this record. This document, as well as any other note book or formulor (Aircraft engine maintenance, replacement of parts, periodic inspections and overhauls) is classified SECRET. When a new note book is issued, the aircraft technical officer presents it to the unit Secret Control Office who numbers all the pages of the note book, affixes the wax seal and gives the book a registration number. When all the pages are filled, a new note book is started and the old book is turned into the Secret Control Officer who certifies as to its destruction.

SAMPLE ENTRIES

Date	Description of Work	Time Req'd	By Whom Performed	Signature	Remarks
1.2.50	1. Prepare work space	10 m	Engine Mechanic		
	2. Remove covers from engines and acft	10 m	Air Crew		
	3. Check servicing of fuel and oil	30 m	Crew Chief		
	4. Drain Segreator	10 m	Crew Chief		
	5. Start, Check Engines	20 m	Acft Tech Officer		
	6. Perform preflt inspection	20 m	Acft Tech Officer & Crew Chief		
	7. Service the acft	5 hrs	The Crew		
	8. Perform after flt (daily) inspection	90 m	Acft Tech Off and Crew Chief		
	9. Refuel Acft	15 m	Crew Chief		
	10. Cover the Acft	10 m	The Crew		